WHAT IS CLAIMED IS:

1. A process for the conversion of syngas using a Fischer-Tropsch reactor, the process comprising:
   a) forming a first syngas;
   b) reacting at least a portion of the first syngas containing at least about 2 vol% CO_2 in a Fischer-Tropsch reactor to form a first hydrocarbonaceous product and a second syngas comprising at least about 2 vol% CO_2;
   c) mixing the second syngas with a hydrogen-containing stream to provide an adjusted syngas having a molar ratio of $H_2:(CO+CO_2)$ of at least about 1.0; and
   d) reacting at least a portion of the adjusted syngas in a dual functional syngas conversion reactor to form a second hydrocarbonaceous product and a third syngas comprising a reduced amount of CO_2 than was present in the adjusted syngas.

2. The process of claim 1, wherein at least a portion of the third syngas is used as a fuel in the process.

3. The process of claim 1, wherein the Fischer-Tropsch reactor is a reactor selected from the group consisting of a slurry bed reactor, a fixed bed reactor, a fluidized bed reactor and combinations thereof.

4. The process of claim 1, wherein the Fischer-Tropsch reactor is a slurry bed reactor comprising a Fischer-Tropsch catalyst that comprises cobalt.

5. The process of claim 1, wherein the dual functional syngas conversion reactor comprises a catalyst comprising at least one element selected from the group

consisting of copper, chromium, alumina, zinc, iron, cobalt, nickel, ruthenium, thorium, rhodium, osmium and combinations thereof.

6. The process of claim 5, wherein the catalyst comprises a zeolite.

7. The process of claim 6, wherein the zeolite has an MFI structure.

8. The process of claim 1, wherein the adjusted syngas has a molar ratio of $H_2:(CO+CO_2)$ between about 1.25 and about 3.0.

9. The process of claim 1, wherein the dual functional syngas conversion reactor is operated under conditions including a temperature between about 300°C and about 500°C and a pressure between about 25 atmospheres and about 100 atmospheres.

10. The process of claim 9, wherein the temperature is between about 375°C and about 425°C and the pressure is between about 35 atmospheres and about 75 atmospheres.

11. The process of claim 1, wherein CO_2 conversion in the dual functional syngas conversion reactor is between about 20% and about 80%.

12. The process of claim 1, wherein the hydrogen-containing stream mixed with the second syngas is obtained from a source selected from the group consisting of C_6-C_{10} naphtha reformation, unreacted hydrogen from hydroprocessing a C_{10+}-containing feedstock, syngas and combinations thereof.

13. The process of claim 1, further comprising recovering hydrogen for use in the hydrogen-containing stream by using a recovery process selected from the group consisting of adsorption, absorption, cryogenic separation, membrane separation and combinations thereof.

14. The process of claim 1, wherein the hydrogen-containing stream mixes with the second syngas at least one of before, during or after entering the dual functional syngas reactor.

15. A process for the conversion of syngas using a Fischer-Tropsch reactor, the process comprising:

a) forming a first syngas;

b) reacting at least a portion of a blended syngas, comprising at least a portion of the first syngas and containing at least about 2 vol% CO_2, in a Fischer-Tropsch reactor to form a first hydrocarbonaceous product and a second syngas comprising at least about 2 vol% CO_2;

c) mixing the second syngas with a hydrogen-containing stream to provide an adjusted syngas having a molar ratio of H_2:($CO+ CO_2$) of at least about 1.0;

d) reacting at least a portion of the adjusted syngas in a dual functional syngas conversion reactor to form a second hydrocarbonaceous product and a third syngas comprising a reduced amount of CO_2 than was present in the adjusted syngas; and

e) blending at least a portion of the third syngas with at least a portion of the first syngas to form the blended syngas.

16. The process of claim 15, wherein the blended syngas has a CO_2 content of about 15 vol% or less.

17. The process of claim 16, wherein the CO_2 content is about 10 vol% or less.

18. A Gas-to-Liquids facility comprising:

a) a Fischer-Tropsch reactor that reacts at least a portion of a first syngas, comprising at least about 2 vol% CO_2, to form a first hydrocarbonaceous product and a second syngas comprising at least about 2 vol% CO_2;

b) a hydrogen source that supplies a hydrogen-containing stream that mixes with the second syngas to form an adjusted syngas; and

c) a dual functional syngas conversion reactor that reacts at least a portion of the adjusted syngas to form a second hydrocarbonaceous product and a third syngas comprising a reduced amount of CO_2 than was present in the adjusted syngas.

19. The facility of claim 18, wherein the Fischer-Tropsch reactor is a reactor selected from the group consisting of a slurry bed reactor, a fixed bed reactor, a fluidized bed reactor and combinations thereof.

20. The facility of claim 18, wherein the Fischer-Tropsch reactor is a slurry bed reactor comprising a Fischer-Tropsch catalyst that comprises cobalt.